

**THE CHELSEA, MASS.
URBAN FIRE
DEBRIS REMOVAL OPERATIONS
14 OCTOBER 1973 - 5 APRIL 1974**



**DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION**

AUGUST 1974

SYNOPSIS

This after action report addresses the non-flood involvement of the Corps of Engineers supplementary efforts to that of local Government in the elimination of safety hazards resulting from a major urban fire.

Key aspects of the interactions and modus operandi under which the Corps performed their assigned missions from the Federal Disaster Assistance Administration in accordance with the provisions of Public Law 606, 91st Congress are discussed.

In two months, 19 contracts amounting to \$550,000 were awarded and supervised for elimination of safety hazards, demolition and razing of unsafe structures, clearance of debris, decontamination and water and sewer line repairs.

The Chelsea Area Office, U.S. Army Engineer Division, New England closed after 60 days of operations on 19 December 1973 after having pioneered the first official Federally assisted urban fire disaster in U.S. history.

COVER PHOTO:

Aerial view of a portion of the 18 Block
Area taken at 10:30 A.M. 15 October 1974.

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1. THE NATURE OF THE DISASTER.

Chelsea, Massachusetts; settled 1624, a town 1739, a city 1857, was totally destroyed by fire approximately 61 years ago. Since then it had rebuilt itself along the limits of the original narrow streets paralleling the waterfront of Boston Harbor. Over the last 60 years, in the general vicinity of this latest fire, several fuel storage tank farms had been erected surrounded by mixed residential, commercial and light industrial structures. Urban renewal programs had begun to the point where authorities were negotiating with property owners. Fire insurance was next to non-existent for persons residing within the city, due to an aging water supply system, and associated high insurance risks.

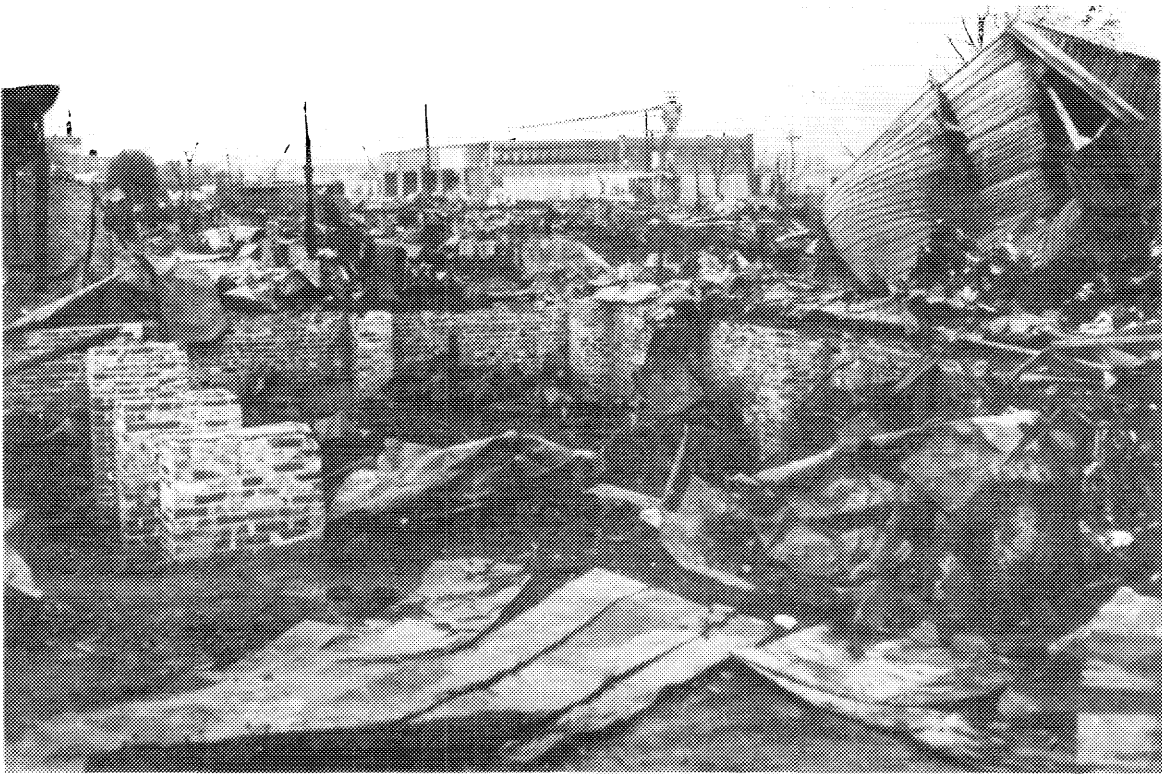
This was the scene that prevailed on a beautiful, but breezy sunny Sunday afternoon the 14th of October 1973 when the Chelsea Fire started from an undetermined origin. The fire erupted in a vacant building necessitating the first alarm being rung at 3:56 p.m. Within 11 minutes a second and third alarm was sounded; then an off-duty call and a fourth alarm signalling to all concerned that a "conflagration" was in progress.

Nearby fire apparatus immediately responded and over 1000 men with their equipment poured in from eighty nearby cities and towns. The wind, reaching gusts of 50 miles per hour threatened to engulf the entire city in flames. Fire storms raged beneath the night-like blackened skies while the heroic firefighters were retreating block by block barely managing to save themselves and their equipment. In a stand of determination, the firemen massed their efforts and established a curtain wall of water at salient downwind points and contained the flaming mass of homes and businesses thus preventing the extinction of the entire city of Chelsea. At two a.m. of the 15th of October, after ten hell-like hours, the inferno was brought under control but it was not until 7 a.m., when only isolated blazes raged in spotty areas, that authorities were able to breathe easily.

In its wake the conflagration had wiped out 18 city blocks (approximately 33 acres) of more than 500 houses and businesses, amounting to in excess of \$20 million of damages. Amazingly not a single human life had been claimed. However, destroyed within the fire area was the city's Public Works shops, garages, and all their equipment.

2. ESTABLISHMENT OF THE CHELSEA AREA OFFICE.

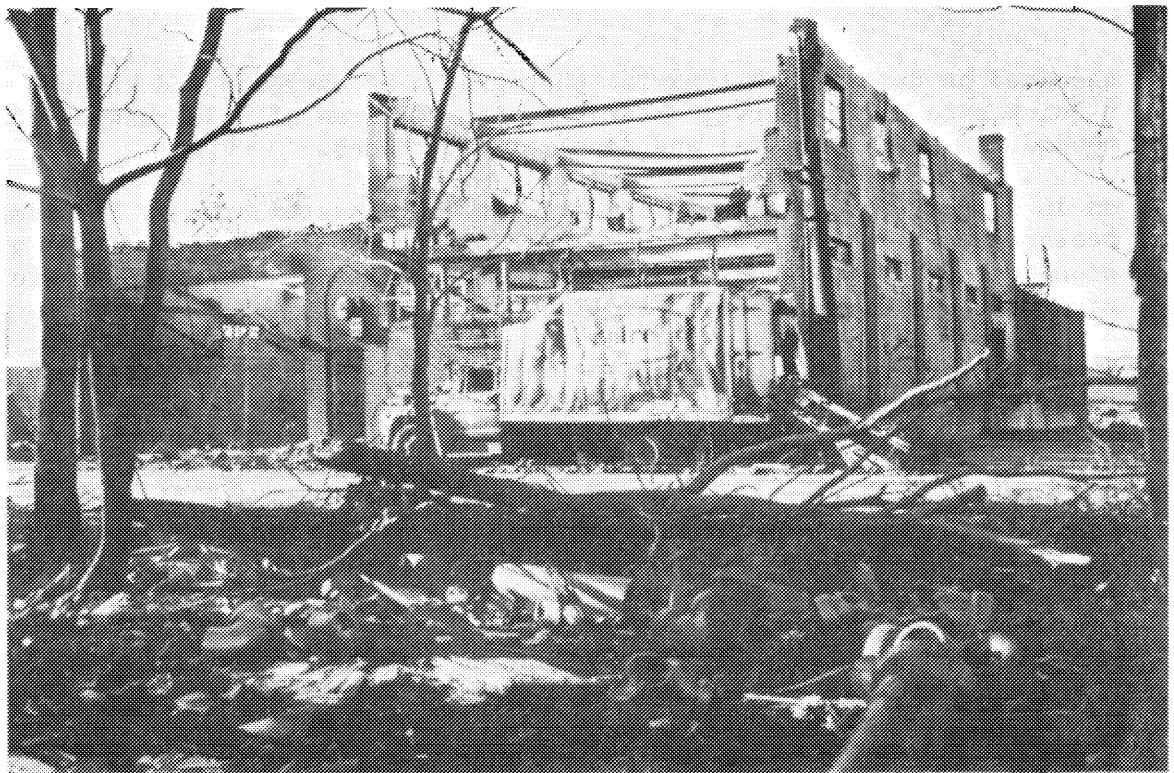
The Mayor, aided by the two Massachusetts U.S. Senators and the Governor petitioned for Federal assistance. The Deputy Division Engineer (DDE), New England Division (NED), Corps of Engineers (COE) was designated as the COE Disaster Coordinator by the Division Engineer. The DDE attended the first Federal Disaster Assistance Administration (FDAA) meeting on 15 October. In anticipation of the "public assistance" work to be



End of Bldg. No. 209 2nd. St. looking toward Carter & Summer Sts.



Security Fur Storage Warehouse, Inc. Corner of Maple & Summer Sts.



Destroyed Poultry Warehouse on Elm St.



Destroyed Residence on Elm St. prior to debris clearance.

assigned he directed that aerial photographs be obtained and through a quick site unseen survey estimated that millions of dollars would be needed for debris removal and demolition purposes.

On 16 October 1973 the area was designated a disaster area by Presidential Declaration. The FDAA under Disaster Contract FDAA-405-DR assigned a mission to the NED (Appendix A). Briefly, the initial assignment was to clear streets of debris and demolish safety hazards.

The DDE, NED met with U.S. Senator Brooke on 17 October and outlined the work to be accomplished by the Corps of Engineers.

The NED quickly established a Chelsea (Fire) Area Office (CAO) on 18 October 73 under General Order 13 dtd 18 OCT 73 (Appendix B) with an initial staff of 2 Army officers and 6 civilian personnel. The CAO administrative office was located by NED Real Estate personnel in the Chelsea Naval Hospital Bldg. 60 and a field office was centrally sited in the stricken area in a trailer.

The basic staff was augmented by 6 non-commissioned officers (Construction Inspectors) from the 39th Engr. Bn. (CBT) Ft. Devens, Mass., and by 6 personnel from C.E. Maguire, Inc. Architect-Engineers (Table 1).

The office was operational on 18 October when the first coordinating meeting was held with city officials. At this first meeting, the city's priorities were established thus paving the way for the award of the first contract.

AREA OFFICE STAFF (28)

*Area Engineer ----- Maj. J. Benca
 *Assistant Area Engineer --- Capt. H. Simon
 *Administrative Assistant -- Leo Baldwin

<u>AUDIT & ACCOUNT (2)</u> (Non-Resident)	<u>ADMINISTRATIVE (3)</u>	<u>SUPPLY (4)</u>	<u>REAL ESTATE (1)</u>	<u>LEGAL (1)</u>
Chief Assistant	*Chief --- T. Wilga 1 Clerk Typist 1 Photographer (on-call)	*Chief - Ed Courtemanche 1 Admin Assist (Steno) 1 Contract Spec. 1 Typist	*Chief - Jim Barry	Chief - Ed Russell
	<u>ENGINEERING (6)</u>	<u>OPERATIONS AND CONSTRUCTION (8)</u>		
	*Chief & Civil Engineer - Frank Morris (1 Structural Engineer A.E. (1 Sanitary Engineer (1 Mechanical Engineer (1 Electrical Engineer (1 Estimator	*Chief & Negotiator - Gunnar Berglund 1 Construction Engineer 6 Inspectors (NCO-Active Army)		

*INITIAL CADRE (8 ea)

TABLE 1

3. OTHER KEY AGENCIES.

Liaison contacts were established with the FDAA and mission oriented Federal, State and city of Chelsea agencies; i.e. Housing and Urban Development (HUD), Food and Drug Administration (FDA), Bureau of Public Roads, Environmental Protection Agency (EPA) and the U.S. Public Health Service (USPHS).

State agencies involved were: the National Guard (NG), Massachusetts Health Department and the Massachusetts Office of Civil Defense.

City agencies were: the Mayor's office, Solicitor, Building Inspection, Police, Fire and Health Departments, City Engineer and the Chelsea Re-development Authority (CRA).

4. PUBLIC AFFAIRS AND SAFETY EFFORTS.

The Corps of Engineers personnel, outfitted in bright red jackets quickly became the most visible aspect of the disaster recovery operations. Through the means of the NED Public Affairs & Safety Offices news releases were filed detailing the steps being taken to insure the health and safety of the stricken community. Every action was relayed to the public through the communications media and the "Corps Cares" motto became more than just a phrase.

To permit unobstructed work and to provide safety from hazardous buildings and standing walls the area was blocked off by barricades. (Safety Plan Appendix 6). The NG maintained road blocks at strategic points to admit only authorized personnel. On 27 Oct the NG was relieved by Chelsea City Auxiliary Police and on 2 Nov through traffic on Everett Avenue was allowed with cautionary signs posted advising of hazards.

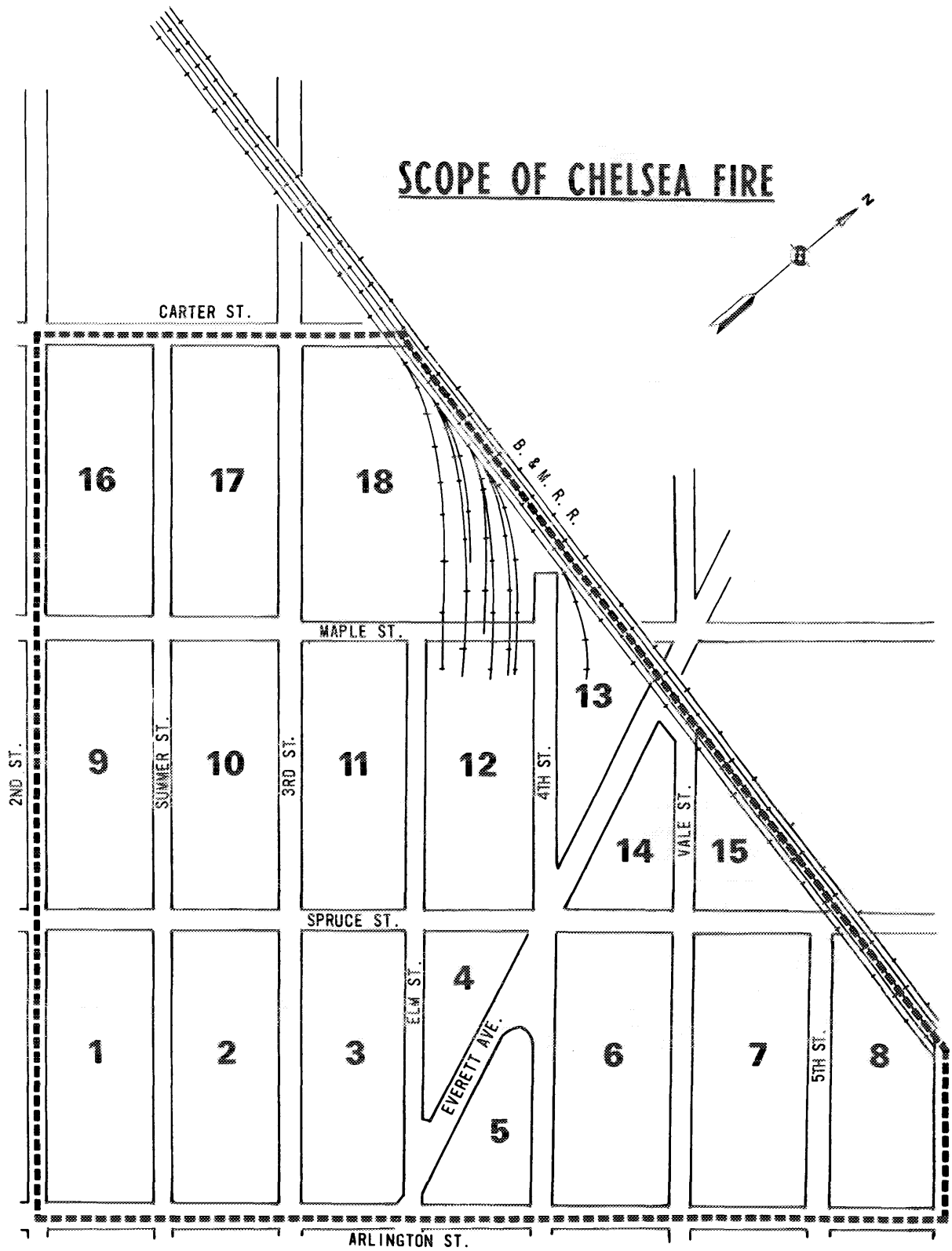
Immediately after the disaster, bi-lingual warning letters and posters in English and Spanish were issued by the CAO to all the school children and placed in prominent places within and near the affected area. (Appendix D). The basic hazards were stressed and because some areas had to be sprayed with decontaminants a "poison" warning was included.

There was some looting and scavenging even though the area had been gutted by the fire. The demolition of buildings and leveling to grade through immediate letting of contracts as the dangerous blocks were released, effectively restored health and safety to tolerable levels.

5. PRIORITY CONTRACTS AWARDED.

Site surveys were made on 18 October 1973 and the mission area was outlined and designated by block numbers (see Map, Plate 1). The Williams

SCOPE OF CHELSEA FIRE





Williams School Foreground prior to debris clearance.



**Anthony Construction Company begins debris
clearance adjacent to Williams School.**

Elementary School, with an enrollment of 1700 pupils is immediately adjacent to the disaster area. The first priority established was to eliminate nearby hazards in order to safely reopen the school, thus the first contract was awarded on 18 October to Anthony Construction Co., Inc. for demolition of buildings in Blocks 3A and 4A bordering Arlington Street.

Weeks prior to the onset of the fire, traffic flows within the city of Chelsea had swelled due to the detour of traffic which resulted from damages sustained to the superstructure of the Mystic River Bridge. The Mystic River Bridge is a prime artery feeding Boston from the North. When the fire occurred, the detour was lost thus forcing traffic to transit every side street of the city resulting in a strangle hold. Consequently, the Mayor's second priority was to quickly clear Everett Avenue and re-establish a safe route necessary for the venting of congestion within the city.

The progress of the mission was complicated by the presence of 24 underground fuel storage tanks and propane, natural gas tanks which had to be located and defueled. Those that contained gasoline, oil or volatile fluids had to be pumped out and or removed under a service contract and properly recycled.

6. DISPOSAL OF ORGANIC MATERIAL.

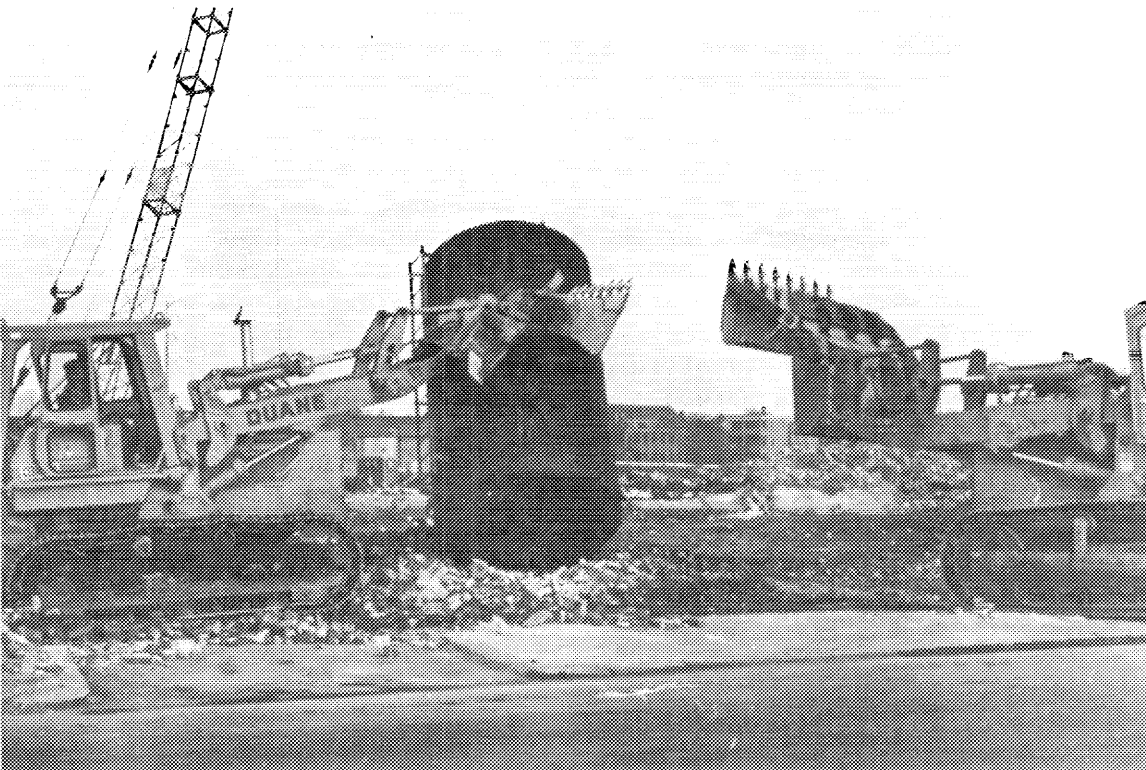
One aspect of the work presented a problem that was solved through State and Federal agency cooperation. A vegetable and bulk, frozen meat company buildings had been demolished for safety reasons. Buried in the rubble were 240,000 pounds of decaying organic material and animal remains. A second building contained several thousand dead chickens. Putrefecation was setting in although fortunately retarded somewhat by cool weather. The disposal of the material presented an environmental challenge. Several alternatives were explored, i.e. burning by incineration, selling to a fertilizer company, burying on site or elsewhere, ocean dumping or burning on site or elsewhere. It was finally determined that containerizing on site and removal to an EPA, FDS, and State Health Department approved land fill burial site was the most satisfactory solution. Seagulls took care of a majority of the exposed chickens. A chlorine solution was applied throughout this phase of removal operations for two-fold purposes. First, it was a successful method of combating stench. Secondly, it was a quick method of surface disinfection.

7. URBAN REDEVELOPMENT CONSIDERATIONS.

Prior to the fire, the Chelsea Redevelopment Authority (CRA) and other local authorities had designated 12 of the 18 effected blocks as an urban renewal and redevelopment area. To assist future renewal efforts the CRA/HUD requested that the Corps provide for in all demolition contracts



View of Everett Ave. debris clearance operations.



Dry cleaning fluid storage tank being removed after having been neutralized.

the filling of basements and cellars and to grade the area to ground level in accordance with HUD urban renewal criteria.

The FDAA eligibility manual did not address the specific problem of fire in an urban area. In this instance it was decided by FDAA to modify HUD/CRA as well as FDAA criteria in providing for removal of all metallic debris above and below ground level. Bricks were saved and utilized as clean rubble fill. Sewer and water service lines were severed and sealed at the curb-line. Combination storm and sanitary sewers were cleaned out in order to keep the area free draining. Ground level grading was performed. The work was coordinated to expedite later Federal/State/City efforts on the urban renewal and redevelopment effort.

8. THE APPROACH TO DEBRIS CLEARANCE.

City block by city block demolition was mapped out by local officials and the contracts let by the CAO in checkerboard fashion to avoid unsafe work/ traffic conflict between contractor equipment. Furthermore, with an underground utility system, the most effective way to neutralize the system was to create a contract package bounded by the granite curbstones delineating a square city block. Formal release of the blocks to the Corps was a responsibility of the city of Chelsea. The city Building Inspector signed each release. Preplanned specifications written by the Chelsea Area Office Engineering Section were fed to the Chelsea Area Office contracts section for fast action on requests for quotations. On occasion, local political realities delayed the release of some blocks. Involved were local political questions relating to re-use (zoning) of the land which has been partly residential but had also housed many businesses dealing in non-ferrous metal, wastepaper, rags, tire and automobile salvage.

9. LEGAL ASPECTS.

In the interim between the date of the award of the contract to knock down and clear debris from two blocks in the area and the date of Contractor performance; two property owners in this two block section stated that they wished to remove their personal property, namely, scorched machine equipment and burned automobiles. Both types of property were badly burned and it was ascertained that they only had scrap value. Prior to the award of the contract the city Building Inspector, operating under Chapter 143 of the General Laws of the Commonwealth of Massachusetts, Sections 6 and 7, assured the Chelsea Area Office that these two blocks were ready to be cleared.

The property owners coming forth at this time created a dilemma, since the contract gave the contractor title to all such property at the time of the award and, the contractor's bid was low because he expected to proceed immediately upon award with no interference in work progress.

The city Building Inspector ruled and said to proceed with the job and have the contractor remove the property. This incident demonstrated the applicability of PL 91-606, in making the municipality assume responsibility in decisions affecting such property owners. The Public Law requires the Federal Government to receive an assurance from the municipality to provide all easements and rights-of-way as well as a promise to hold and save the United States free from any damages arising out of the approved work and to indemnify the Federal Government from any claims arising out of debris clearance. The Corps' legal position was once again publicly clarified by letter issued by Counsel (Appendix C).

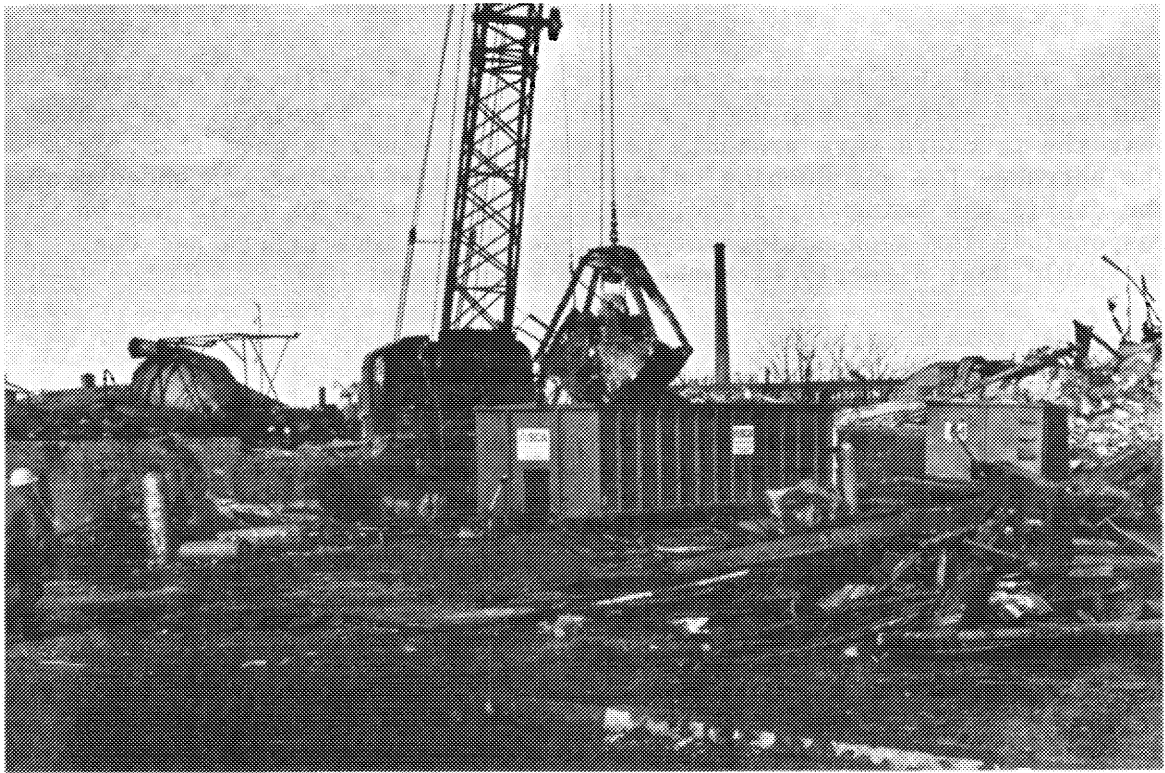
With these assurances the Government was free from liability. However, to make clearer what was happening and to avoid problems such as this, a release form was obtained from the Building Inspector for each of the successive blocks that were to be worked on prior to each contract being let or amended,

Some buildings around the extremities of the fire area were affected by the fire but there was a question as to whether they were damaged severely enough to warrant the city Building Inspectors judgment to remove them. Consequently, there were temporary restraining orders issued on at least two such buildings. When the position of the Corps was conveyed to the city, that mentioned above as being the spirit of PL 91-606, it was clear to everyone that the city would be responsible for the decision to remove or not remove such buildings,

Since this was a disaster area, competitive negotiation was authorized. The Davis-Bacon Act was inapplicable. PL 91-606 states that local firms are to be given preference.

A question arose when a second mission was given the Corps; that of capping off sewage lines. The issue was whether such contracts would involve construction and fall under the Davis-Bacon Act for labor purposes. Armed Services Procurement Regulations (A.S.P.R.) states that jobs principally of a service nature, and involving small amounts of construction in an incidental nature, are not to fall under the requirements of the Davis-Bacon Act. This mission was determined to be directly under the exempt category,

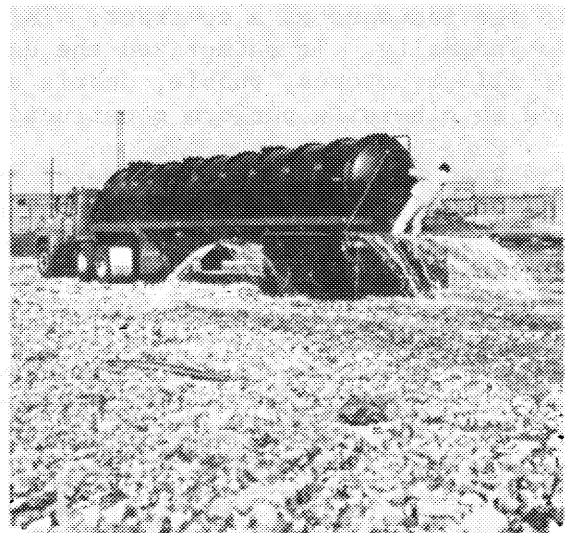
Another problem arose as to the place where the debris was being dumped by the contractors and their employees as well as firms they subcontracted. One incident involved unlawful dumping. The prime contractor was notified



Containerization of animal remains.



Bulk disinfectant prior to batching.



Application of disinfectant.

and he stated that he subcontracted with a trucking firm to haul the debris to a certain dump where an entrance fee was required. He stated that the truckers were probably pocketing the money he gave them for the entrance fee and dumping unlawfully. The land owner, on whose property the debris was being deposited, was told that the Corps could not be responsible for such actions of its independent contractors and that he should deal directly with the prime contractor.

10. REAL ESTATE ASPECTS.

It was the responsibility of the Real Estate section of the Chelsea Area Office to insure that the proper real estate assurances were obtained from the State and local Government. The city of Chelsea on October 17, 1973 signed Section 7, Chapter 143 of the General Laws of the Commonwealth of Massachusetts.

This authorized the city Building Inspector and his assistants, to enter property in the devastated area and to direct the razing of buildings to make them safe, to remove all foreign material, to fill cellar holes to grade and to cap all utilities.

On October 16, 1973 a resolution was passed by the Board of Aldermen which provided without cost to the United States all lands, easements and rights-of-way necessary for the accomplishment of the approved work, it held and saved the United States free from damages due to the approved work and with respect to debris removal, indemnified the Federal Government against any claim arising from such removal.

Release was obtained for the city Building Inspector for each area prior to the issuance of a contract. This was a Right of Entry and Agreement to Indemnify. It authorized the United States to remove and dispose of all structures, rubble, debris and personal property of whatever nature and to otherwise perform construction work of any nature.

The Real Estate representative of the Chelsea Area Office was responsible for coordinating with the city Building Inspector in determining which areas were available. This information was given to the Engineering Section, Chelsea Area Office, which supplied the necessary maps. The maps were attached to the written releases which included a description of the properties. The city Building Inspector then signed these releases. Real Estate, Chelsea Area Office, was also charged with the task of determining ownership of both real and personal property, the latter consisting of vehicles, safes, underground and surface storage tanks. Progress maps were also supplied by this section.

When it became necessary because of incapacity of the city to clean and repair sewer and drain lines and repair leaks in water mains located in the public way of the area, the city of Chelsea passed a new resolution dated November 16, 1973 authorizing the Chelsea Area Office to perform the above work.

The most consequential endeavor in real estate matters was coordinating with the city Building Inspector who was saddled with a monumental task which he handled in addition to his regular duties. The inspector, by virtue of his adjudication of the laws of the Commonwealth of Massachusetts, prolonged the releasing of parcels to the point wherein there were short periods of CAO inactivity.

11. ENGINEERING.

Due to staff limitations within NED an A/E contract was negotiated with C.E. Maguire to provide the following engineering staff element of CAO:

- 1 Estimator
- 1 Mechanical Engineer
- 1 Structural Engineer
- 1 Sanitary Engineer
- 1 Electrical Engineer

The above personnel worked under the direction of the Chief of Engineering Section, a permanent NED employee.

The following actions were instituted upon arrival on the disaster scene:

- 1) A survey of the area was made to identify and deactivate dangerous utilities (gas, electric, etc.)
- 2) Joint assessment with city official's of the situation was made to determine priorities of work.
- 3) A photographic inventory of the area was initiated to document structural safety hazards.
- 4) Contact was made with the city fire department, public works and building inspectors to determine locations and contents of all underground tanks and utilities.
- 5) A visual inspection of the area was made to identify unique disposal problems; rags, waste paper, tires, safes, company records, decaying organics, etc.
- 6) Preparation of plans, specifications and cost estimates for accomplishment of necessary work by contract was begun.

Engineering activities were closely coordinated with Federal and State EPA representatives, Federal Drug Administration, the various utility companies (Boston Edison, Boston Gas and New England Telephone), the various city departments, the local Board of Health and urban renewal authorities.

A number of unique disposal problems involving decomposed animal and vegetable organics, burned tires, rags and unsundry items were encountered. Technical requirements and specifications were developed to handle each individual condition encountered due to environmental considerations.

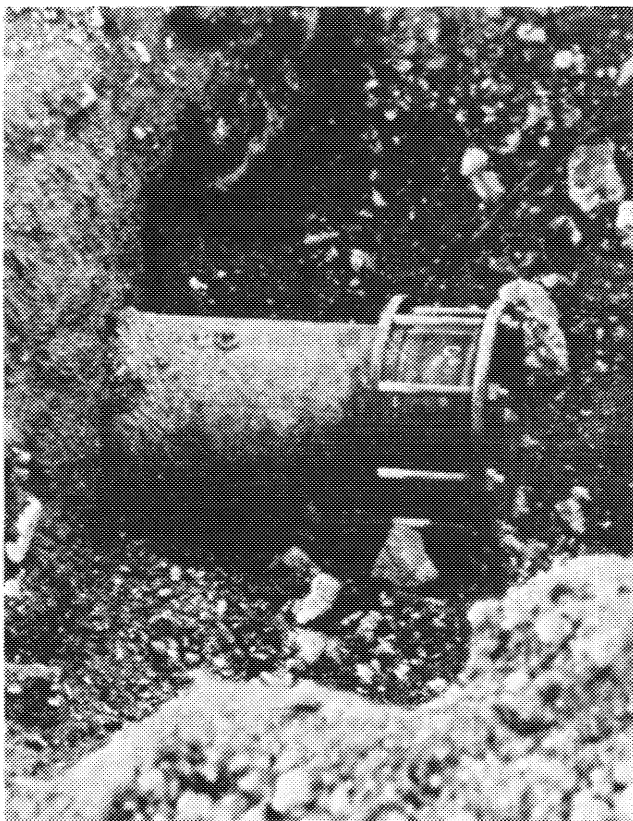
A structural engineer was assigned to work with the city Building Inspector. An inventory of structural recommendations for buildings to be demolished and structures safe enough to remain were developed. Those structures designated for removal by the city Building Inspector were incorporated in the plans and specifications as blocks were released for contracting. Questions requiring evaluation leading to determining final structural status are at Appendix F.

FDAA Mission Assignment Supplement No. 1 dated 19 Nov 1973 added new scope to the U.S. Army Corps of Engineers mission. Responsibilities for the combined sanitary sewer and storm drain system, and water system were added to the work load. Plans and specifications had to be developed considering the antiquated condition of the systems judged by the fact that they had been in service for many years.

The Federal Disaster Assistance Program Eligibility Handbook (3300.2) is not particularly responsive to disaster type situations that develop as a result of a major urban fire. Considerable engineering thought had to be applied in scoping and administering mission assignments. Requirements were modified to some degree by HUD and FDAA to permit demolition work to be accomplished in a manner that would expedite redevelopment. These considerations were reflected in the mission assignments and incorporated in specifications for accomplishment of the emergency work. Copies of the following specifications developed specifically for the Chelsea Fire Disaster are attached for possible usage in future Corps of Engineers mission of this type.

- a. Typical specifications for emergency demolition (Appendix G).
- b. Typical specification for cleaning combined sewer and storm drain systems under emergency condition (Appendix.H).
- c. Decontamination specification-develop in accordance with EPA requirements (Appendix I).

The devastated blocks were reduced to a rough graded rubble surface. Approximately 40,000 c.y. of earth would have been required to cover the burned areas and provide a 1/2% slope for drainage. This volume of fill was determined by FDAA to be ineligible. EPA requested that a 1000 ppm solution of available chlorine be applied to the fire area as a decontaminate and eradicator of stench thus substituting for the earthfill. This was accomplished with 7000 gallon tank trucks in accordance with prescribed rates of application.



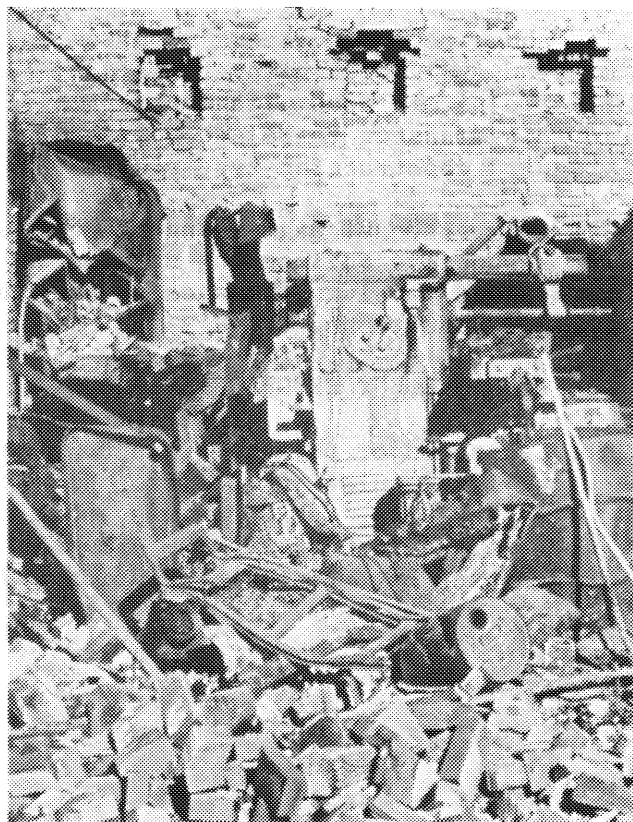
Sealed water line.



Clean up after debris removal.



Cleaning out sewer inlets.



Remnants of machinery.

Plugging of individual sewer connections and disconnection of water services were deemed by FDAA to be an eligible cost. This was accomplished as part of the contract work. Cleaning of the combined sanitary sewer and storm drainage was accomplished as part of the procedure to restore adequate surface drainage in the interest of public health and safety.

In view of the existing conditions and antiquity of the water system, individual spot repairs of the many leaks resulting from, disrupted service connections, breaks due to earthmoving machinery operations, leaky valves and broken hydrants, all proved to be unfeasible from public health and safety stand points. After lengthy discussions and a considerable amount of engineering and cost analysis it was mutually agreed by all agencies that the following course of actions would provide the most feasible solution:

- a. terminate existing lines wherever feasible.
- b. remove deactivated hydrants.
- c. Install a new 10" cast iron main to replace lost capacity within the main loop system resulting from termination of 6" and 8" grid system throughout fire area.
- d. Install 3 new hydrants at key alternate locations to retain fire protection. Bypass networks to be abandoned thus restoring system integrity.

The above recommendations resulted in the U.S. Army Corps of Engineers mission assignment being revised by FDAA Supplements #2 dated 7 December 1973 to permit accomplishment of this work. This work, was the first in this disaster to be accomplished under a U.S. Army Corps of Engineers standard construction type contract with a unit price bid schedule.

The A/E personnel augmenting the engineering office provided a valuable and responsive engineering service under a diverse range of emergency conditions involving changes in assignments, priorities, schedules and working conditions.

12. PROCUREMENT PROCEDURES.

The Corps' major objective was to make the area safe to the public as quickly as regulations permit. With the President declaring Chelsea a disaster area, the Corps was able to contract for the required services in accordance with the Armed Services Procurement Regulation as implemented by Engineer Regulation 500-1-1, Natural Disaster Procedures.

The procedures used are as follows:

- a) Contractors were solicited by a Request for Quotations, SF18, to give prices for performing work in a designated block or blocks. In accordance with prescribed regulations, local contractors (within Suffolk County) were given preference both in the solicitation and resulting award.
- b) All contracts were awarded through competitive negotiation on a lump sum or unit price basis.
- c) Two contracts were awarded for leasing plant and equipment with operating personnel and supplies for knocking down structures in the devastated area.
- d) The "CONTRACT FOR DISMANTLING, DEMOLITION OR REMOVAL OF IMPROVEMENTS, DEPARTMENT OF THE ARMY" was used for accomplishing most of the work.
- e) Miscellaneous service type contracts were used when needed, such as for pumping out fuel and other hazardous liquids from underground tanks, and for surface decontamination.
- f) The standard Government purchase order was used for all jobs \$10,000.00 and under.
- g) Performance and Payment Bonds had not been required, and wage rates were not been inserted into any contracts; however, contractors were required to pay the minimum wage (\$1.60 per hour).
- h) No work was awarded until the applicable blocks are released to the Corps by the city Building Inspector.

At Appendix J is a list of contracts that were accomplished.

13. CONSTRUCTION ASPECTS.

Upon receipt of plans and specifications for solicited work, interested contractors were given a tour of the work area. After the tour contractors were instructed to return to the resident field office for clarifications and/or questions.

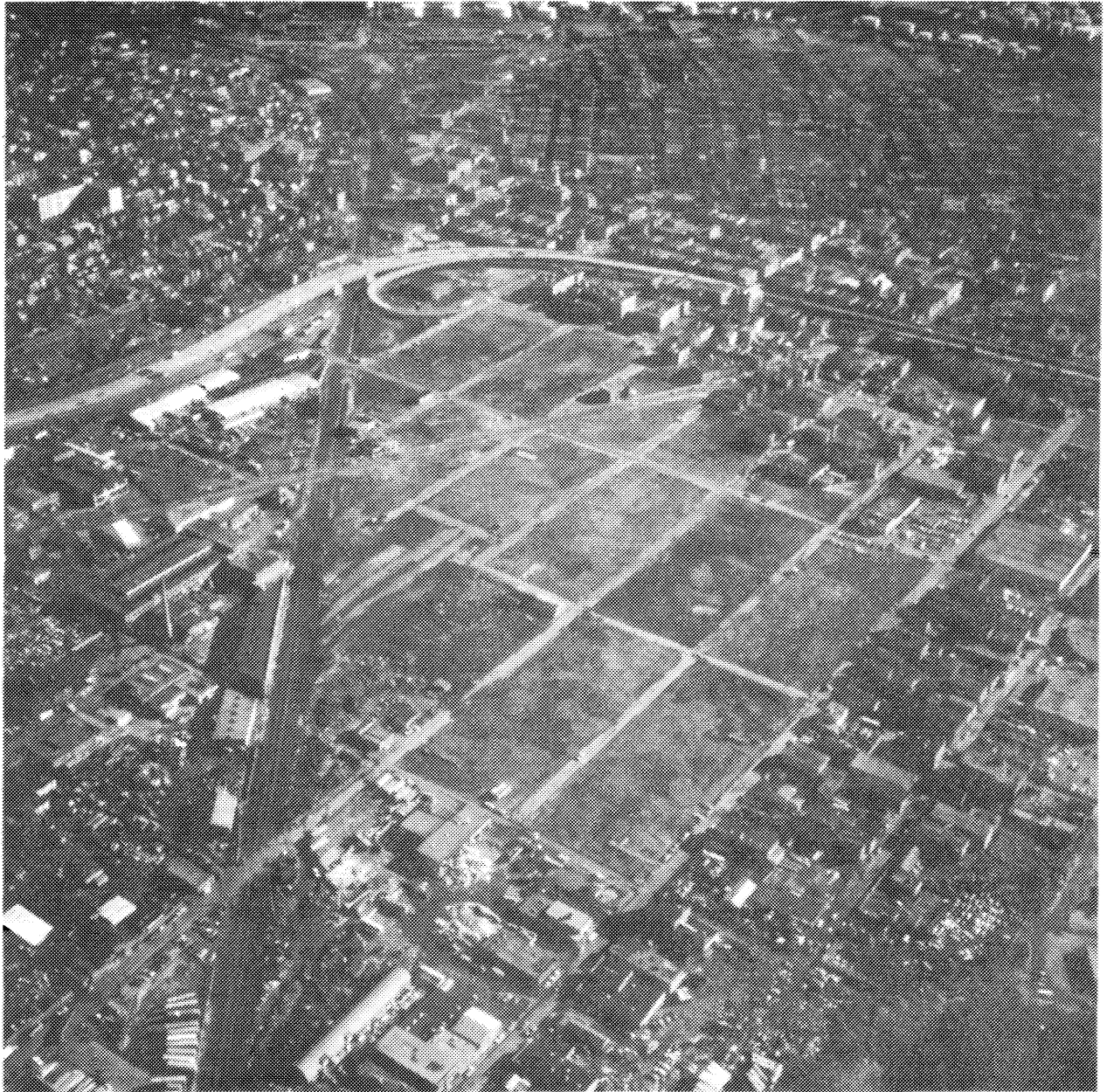
Following contract award, a pre-work conference was held at the field office to go over contractor procedures, equipment, and safety aspects of his required work. During the work period, weekly safety meetings were conducted by the contractors with a Government representative in attendance.

Each contractor worked under the supervision of Government inspectors, and daily reports were kept on all contractual progress. The U.S. Army, 39th Engineer Battalion (CBT), Ft. Devens, Mass. supplied six, handpicked, non-commissioned officers as Government construction/demolition inspectors.

Significant problems encountered during the demolition operation were: traffic control, spontaneous fires, curiosity seekers, and vandalism. National Guard troops were able to maintain traffic and vandalism control while they were available. Upon their disengagement little or no control of either problem could be established. As identifiable personal effects, such as safes and books, were uncovered and removed from the debris by the contractors, they were returned to their rightful owners by the Chelsea Police Department. Fires, ignited during demolition operations, were quickly and efficiently controlled by the Chelsea Fire Department.

The unearthing of human remains were not anticipated. Official reports had accounted for all personnel residing in the area. The Corps contracts nevertheless outlined the procedure for handling the remains should one have been uncovered. Additionally, the inspectors vigilance insured that no remains be overlooked should a contractor uncover one.

The field office was closed on 19 December 1973. The remaining contract in force only required inspection of the water system repairs. Consequently this inspection requirement was transferred to another nearby Corps Area office for finalization. Due to the long lead time for ordering and receipt of the pipe as well as the onset of winter, this contract was completed in early spring thus bringing to a conclusion the final installment of Corps involvement in this Fire episode.....



Aerial view looking East toward waterfront upon
completion of Debris Removal Mission (Dec. '73)

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL DISASTER ASSISTANCE ADMINISTRATION
BOSTON, MASSACHUSETTS 02203

REGION 1

IN REPLY REFER TO:

October 17, 1973

Disaster Contract FDAA-405-DR
Commonwealth of Massachusetts
Presidential Declaration: October 16, 1973
COE/NED Request No. 1

Colonel John H. Mason
Division Engineer
U.S. Army Corps of Engineers, New England Division
424 Trapelo Road
Waltham, Massachusetts 02154

Dear Colonel Mason:

Pursuant to the provisions of Public Law 606, 91st Congress (hereinafter called the Act); Executive Order 11575 and Executive Order 11662; Title 32, Code of Federal Regulations, as revised, Part 1709 (Reimbursement of Other Federal Agencies Under Public Law 91-606) and Part 1710 (Federal Disaster Assistance), your agency is hereby requested to perform the following work where damaged occurred in the City of Chelsea, Suffolk County, Commonwealth of Massachusetts, on October 14 and 15, 1973:

1. Knock down to ground level multiple story structures in the stricken area presently creating safety hazards, (all buildings not creating a hazard are to remain). After such buildings are leveled, they shall be removed as debris from the site.

2. Clear out rubble and debris from the streets.

3. Remove to rough ground grade all rubble and debris within the devastated area. In the case of shallow foundations and slab-on-grade type construction, foundations will be broken and removed, slabs broken and removed. In the case of deeper foundations (7'+), walls shall be broken and pushed into the foundation area. In the instance of such structures having concrete basement slabs, the slabs shall be broken, the basement area shall be filled with materials such as gravel, bricks, and the like. (No metal, wood, or materials of this nature shall be used in this basement filling operation). Prior to filling in a basement area, coordination shall be made with the City of Chelsea and/or Urban Renewal Officials to ensure that all utility lines are located and properly capped. The capping of these lines shall be accomplished by the City of Chelsea.

EXTRACT

APPENDIX A

DEPARTMENT OF THE ARMY
New England Division, Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02154

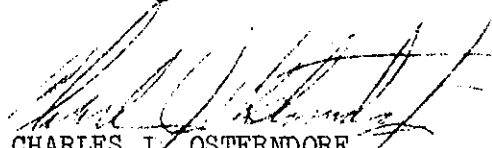
GENERAL ORDERS

NUMBER 13

18 October 1973

SUBJECT: Establishment of Chelsea Area Office

1. To fulfill this Activity's assigned emergency mission responsibilities resulting from the Chelsea fire of 14 October 1973, a temporary area office designated as the Chelsea Area Office, is established effective 18 October 1973 and will be located in Building 60, 2nd floor, Chelsea Naval Hospital, Broadway, Chelsea.
2. MAJ John P. Benca is appointed Area Engineer.
3. CPT Henry F. Simon is appointed Assistant Area Engineer.
4. Correspondence symbol NEDAR-CH is assigned.



CHARLES J. OSTERNDORF
Colonel, Corps of Engineers
Acting Division Engineer

DISTRIBUTION:
Key Personnel

APPENDIX B

SAFETY PLAN

18 October 1973

1. Major hazards and minimum precautions to be taken during Clearing of Fire Debris, Chelsea, Massachusetts, analyzed by Government supervisors and the Safety Office, are to be reviewed with the contractors in conference to be held before commencement of work. The project will be conducted in a single phase of multi-operators and the following provisions are planned:

MAJOR HAZARDS

MINIMUM PRECAUTIONS

Falls of Persons

Wear non-slip soles on shoes.
No work done from top step of any stepladder.
Trailer entrances equipped with steps and handrails.
Clean up oil, grease spills immediately.
Nobody rides on truck body, crane hook or bucket.
Climb on and off machines with steps and hand holds.

Falling Objects

All persons wear hard hats.
No person will stand under crane boom or suspended loads.
Barricade will be set around structures to be demolished to keep all persons away from falling materials.
Tractors, front end loaders and dozers used for demolition will be provided with canopies for Operator protection from falling objects.
Metatarsal guards will be worn by wreckers on structures.

Defective Equipment Failure

Initial inspection and daily check of all equipment.
Maintenance schedule followed for all machines.
Replace worn cable, frayed rope, defective rigging.
Keep guards in place over moving machine parts.
Machines stopped for adjustment or lubrication.
Use no less than 3 clips on cable, installed correctly.
Safety fastenings on pneumatic hose connection.
Pressure test compressor tanks.
Dump trucks, tractors, dozers, front end loaders equipped with automatic reverse signal alarms.
Patched electric extension cords are prohibited.
Automatic auxiliary brakes on hauling units or trucks over 5 tons stopping machine if service brakes should fail.
Rollover bars and seat belts on tractors, dozers, and front end loaders, certified to S.A.E. Standard or Corps approval.

APPENDIX C

MAJOR HAZARDS

MINIMUM PRECAUTIONS

Defective Equipment Failure cont'd

Hauling units not to be overloaded.
Tires with locking rings will be inflated in safety cage.
Bodies of trucks carrying loose materials will be covered.
All cranes will be given static load test of 125% of maximum service load.
Airbrake tanks will be drained daily.

Explosion or Burns

CO₂ fire extinguisher with each machine, source of flame.
Gasoline handled only in approved safety cans.
No fires or explosives will be used.

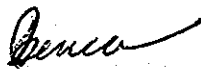
Traffic

Project vehicles full stop at all street intersections.
Speed limit observed on all streets.
All trucks carrying loose material to be covered.

Overturn of Heavy Equipment

Set barricades to prevent end dumps overrunning embankments.
Limit overloading of equipment.
Outriggers set on cranes.
Solid and level standing for cranes.

2. Minimum precautions against major hazards, planned in advance by the Government, are to be incorporated in the contractors' Accident Prevention Plans for review in weekly safety training and for continuous enforcement by supervisors.


BENCA
Area Engineer

cc: Constr Div.
Safety Ofc.
Res. Insp.
Reading

WARNING
AVISO



WARNING
AVISO



DANGER
PELIGRO

THE DEMOLITION AREA IS DANGEROUS
EL AREA DE DEMOLICION ES PELIGROSO

BEWARE OF:

ESTE PENDIENTE DE:

BACKING TRUCKS
CAMIONES DE CARGA

FALLING AND FLYING OBJECTS
OBJETOS CALLENDOSE

MOVING EQUIPMENT
EQUIPO EN MOVIMIENTO

OPEN EXCAVATIONS
EXCAVACIONES ABIERTAS

POISON IN SOME AREAS
AREAS CON VENENO

DECONTAMINATION MATERIALS
MATERIALES DE DECONTAMINACION

HAZARDOUS AREA; KEEP CHILDREN AWAY
AREA PELIGROSA, MANTENGA LOS
NINOS FUERA DEL AREA

U.S. ARMY ENGINEERS
CHELSEA AREA OFFICE

COPY



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02154

REPLY TO
ATTENTION OF:
NEDOC-1

31 October 1973

Mr. John F. Sullivan, Jr.
Regional Director
Federal Disaster Assistance Administration, Region 1
JFK Building, Room 2003
Boston, Massachusetts 02203

Dear Mr. Sullivan:

With reference to your conversation on 30 October 1973 with Colonel Osterndorf concerning removal of rubble and debris from the Chelsea disaster area, I am furnishing a position statement of the Corps of Engineers with respect to our operations in that area.

Under Public Law 91-606 (42 U.S. Code, Art. 4401 et seq.), the Director of the Office of Emergency Preparedness is authorized, after designation of a disaster area, to form emergency support teams and to enlist the aid of any federal agency to perform assigned tasks including and not limited to the following (42 U.S. Code, Art. 4413):

" *****

(4) performing on public or private lands or waters any emergency work essential for the protection and preservation of life and property, including

(A) clearing and removing debris and wreckage in accordance with section 4434 of this title;

(B) making repairs to, restoring to service, or replacing public facilities (including street, road, and highway facilities) of State and local governments damaged or destroyed by a major disaster, except that the Federal contributions therefor shall not exceed the net cost of restoring each such facility on the basis of the design of such facility as it existed immediately prior to the disaster in conformity with current codes, specifications, and standards;

*****"

APPENDIX E

31 October 1973

Mr. John F. Sullivan, Jr.

Article 4413 further provides:

" *****

(d) The Federal Government shall not be liable for any claim based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of a Federal agency or an employee of the Federal Government in carrying out the provisions of this section."

Article 4434 of the same Act provides:

" *****

(b) No authority under this section shall be exercised unless the affected State or local government shall first arrange an unconditional authorization for removal of such debris or wreckage from public and private property and, in the case of removal of debris or wreckage from private property, shall first agree to indemnify the Federal Government against any claim arising from such removal."

It is our understanding that in consonance with the Presidential Declaration of 16 October 1973 an agreement has been or is being entered into between the Commonwealth of Massachusetts and the Federal Government, represented by your agency, which incorporates all of the provisions of Public Law 606 (91st Congress). On 17 October 1973, the day following the declaration of the emergency, you requested the Corps of Engineers to perform certain work including the razing of structures, removal of rubble and debris, and the grading of the devastated area with due consideration to utilities. Accompanying the request was a resolution of the City of Chelsea Board of Aldermen, approved by Philip J. Spelman, Mayor, which agreed to provide without cost to the United States all lands, easements and right-of-way necessary for accomplishment of the approved work and to hold and save the United States free from damages due to the approved work, and with respect to debris removed shall indemnify the Federal Government against any claim arising from such removal.

On 17 October 1973 the City of Chelsea Board of Aldermen ordered the Building Inspector to take steps to raze fired buildings, to level lots and to otherwise make the area devastated by the fire of 14 October 1973 safe.

31 October 1973

Mr. John F. Sullivan, Jr.

In turn, the Building Inspector of the City of Chelsea has made determinations as to the razing of structures in the devastated area and the removal of debris, rubble and foreign matter. Pursuant to such determinations, the Building Inspector has granted the United States a right of entry to enter upon designated blocks in the area and has authorized the removal of rubble, debris and personal property. As new blocks are examined, additional rights of entry and authorization are granted.

In carrying out its mission, the Corps of Engineers is following the provisions of the Armed Services Procurement Regulations with respect to performance of work under emergency conditions. Companies in the area having adequate equipment and operating personnel have been requested to submit bids on a competitive basis for the performance of the work, the removal of the remaining rubble and debris and the clean-up and grading of the areas to a degree required by safety and good practice. Contracts have been and will continue to be awarded on the basis of the lowest reasonable bid received.

The determination of rights in property or in the salvage of materials is a matter which must be determined by the local authorities under the laws of the Commonwealth of Massachusetts. Insofar as the Corps of Engineers is concerned, it will abide strictly by the instructions issued by the representatives of the City of Chelsea as to the disposal of rubble debris. Unless otherwise provided, it is the practice of the Corps of Engineers to require its contractors on clearing contracts to assume responsibility for all of the rubble, debris and foreign matter and to properly remove and dispose of it. I believe you will agree that the emergency nature of the work requires that it be performed as rapidly and efficiently as possible with due regard for local requirements as determined by City officials.

I trust the foregoing explains our position in carrying out the emergency work in the City of Chelsea.

Sincerely yours,

/S/

JOHN H. MASON
Colonel, Corps of Engineers
Division Engineer

EVALUATING FIRE DAMAGED STRUCTURES

Can the building be reasonably and economically made habitable for human occupancy? _____

Are utilities functionally intact? SEWER____, WATER____, ELECTRIC____, GAS____

Does a health or sanitation hazard prevail? Describe.....

Did the structural steel frame of the building move through thermal expansion?

Has steel beam expansion displaced load bearing walls?

Do mortar joints evidence cracking? (indicative of wall movement)

Is the mortar loosened from the joints as a result of the effects of heavy hosing?

As exhibited by efflorescence has moisture penetrated the interior cavities of the walls?

Did the masonry receive heat to the point wherein the mortar has lost its Bonding Properties?

What is the overall percentage of the structure that has been damaged?

If the building can be saved, has it been properly identified so as to be saved from demolition crews?

Are there any unusual hazards associated with this structure? i.e., fuel storage tanks, natural gas leaks?

SPECIFICATIONS
FOR
REMOVAL OF DEBRIS AND STRUCTURE
BLOCK ____, FIRE AREA, _____

SCOPE: The following specifications apply to the removal of all structures and debris within area designated by the City Building Inspector as a portion of Block ____ and indicated in yellow on the attached map, entitled "PARTIAL SITE PLAN, BLOCK ____, CITY OF _____".

1. Provide safety barricades and flagmen as necessary to maintain normal pedestrian and vehicular traffic flow along _____ in accordance with current safety standards and local police requirements.

2. Remove all structures.

NOTE: Removal of debris and structures within limits of work shall be accomplished by labor and equipment in a manner that will not disturb the present structural position and condition of the adjacent inhabited brick structure identified by street address as _____. The contractor shall be responsible for any and all damages/injury to this building, occupants and/or property therein, resulting from the contractors operation.

3. Preserve all pipe stems to underground tanks throughout the contract area and identify the locations to the Contracting Officer's representative.

4. Segregate the dispose of all materials other than earth and masonry rubble above existing ground grade and within foundation limits.

5. Remove personal artifacts such as safes, company records and the like and place at designated locations for identification and removal by police and property owners. There was no known loss of human life in the fire. However, in the event human remains are uncovered during performance of work, the Contracting Officer should be notified immediately.

6. Excavate earth and remaining masonry rubble as necessary to permit demolition of all foundation walls, retaining walls, floor slabs, concrete pads, foundation piers and paved areas.

7. Demolish all remaining foundation walls, retaining walls, floor slabs, concrete pads, foundation piers and paved areas within limits of work.

8. Remove all remaining chunks of masonry rubble less than 7 feet below top of adjacent curb elevation included in the following categories:
 - a. Chunks larger than 2 feet in any dimension.
 - b. Chunks connected by reinforcing steel.
 - c. Chunks with reinforcing steel protruding more than 6 inches from masonry rubble surface.
9. Dispose of all materials in item 8 in a contractor-furnished disposal area.
10. Fill depressions with remaining earth and masonry rubble.
11. Excavate trench along street line to expose all sewer, water, gas and electric utilities. Capping of gas and electric lines will be performed by others.
12. Plug each sewer connection in accordance with following:
 - a. Break pipe at street line.
 - b. Plug pipe on street side with concrete brick and mortar consisting of 1 part portland cement and 2 parts sand. Length of plug shall not be less than 2 pipe diameters or a minimum of 12 inches. Care shall be exercised by prevent clogging of main sewer lines. Each plug shall be inspected by a representative from the City of _____ prior to backfilling.
13. Terminate water service as follows:
 - a. Close water line service gate in sidewalk.
 - b. Expose and cut service line at street line.
 - c. Repair any leaks that may develop in remaining active portion of service line or main resulting from this demolition operation.
14. Rough grade area to existing curb elevation. Surface shall not contain stone or pieces of masonry larger than brick size.
15. Haul remaining surplus of masonry rubble to locations designated by Contracting Officer within fire area and stockpile or spoil as directed.
16. Access and egress of contractor equipment to Fire Area will be permitted via _____ only.
17. Clean streets, sidewalks and affected area as final operation under the terms of this contract.

SPECIFICATIONS
FOR
CLEANING SEWERS
____ FIRE AREA, _____

SCOPE: Clean, remove and dispose of all sludge, dirt, sand, gravel, roots, grease and other debris from combined sewer and storm drain lines, man-holes and catch basins designated in red on attached maps entitled, "PARTIAL PLAN, CITY OF _____, SEWER CLEANING" in accordance with the following specification.

1. Cleaning shall be accomplished with mechanical and/or hydraulic equipment. Mechanical equipment shall consist of rodding and bucketing machines with buckets, brushes and scrapers. No hydraulic equipment shall consist of high velocity type equipment. No hydraulic equipment that operates under a "head of water" or that would cause excessive internal pressure or cause sewage to "back up" shall be permitted. Selection of equipment used shall be based on type and condition of lines at time work commences. Mechanical equipment shall be equipped with a belt booster clutch or overload clutch so that the pipe will not be damaged. No equipment of a direct drive type will be permitted.
2. All necessary precautions shall be taken to protect combined sewer and storm drain lines from damage during cleaning operation. Any unnecessary damage due to negligence by the Contractor shall be repaired at the Contractor's expense.
3. If areas of mis-alignment of pipe, dropped joints, infiltration, structural failures, or other obstructions, are encountered during cleaning operations, the Contractor shall notify the Contracting Officer's representative and record the approximate location of the bad area.
4. All sludge, dirt, sand, gravel, roots, grease and other debris resulting from the cleaning operations shall be removed from the job site. A suitable weir or dam shall be constructed in the downstream manhole in such a manner that both solids and other material shall be trapped. Passing the material from one section to the next, which could cause stoppage of the lines, will not be permitted.
5. During bucketing operations a suitable container shall be provided to receive materials dumped from the buckets. No sewage or solids removed from the sewers shall be dumped or pumped onto the streets or into ditches, catch basins or other drains or sewers. All solids and semi-solids removed from the sewers shall be removed from the site and disposed of by Contractor-furnished means in accordance with prevailing laws and regulations.

6. Upon completion of the cleaning of each section, a full sized brush or scraper shall be pulled through the line to insure complete removal of all debris from the sewer. The equipment used for the final operation shall be a full size "porcupine" brush or where a full size brush will not enter through the manhole opening, a collapsible scraper that will open to the full size of the pipe may be used.

7. Contractor shall furnish and install ____ standard weight cast iron manhole covers of diameters required to replace missing covers on existing manholes within limits of work. The covers shall have the designation "sewer" case in 3" letters.

8. It shall be the Contractor's responsibility to keep records of all cleaning performed. These records shall be in printed form showing the Contractor's name, date, manhole location, section cleaned, size of pipe, length of section, type of equipment used and any special remarks concerning the conditions of the line and manholes. The contractor shall provide a plan indicating limits of lines cleaned, size and type of lines, and areas of difficulty encountered, if any. Records and plans shall be furnished to the Contracting Officer in triplicate.

SPECIFICATIONS
FOR
SURFACE DECONTAMINATION
FIRE AREA

1. Supply necessary equipment and chemicals to disinfect areas within fire zone via a combination of spreader bar and spray applications of a water base solution of 100 parts per million of available chlorine. (equivalent to 1-gallon of clorox per 500-gallons of water or a Neutroleum Alpha solution mixed in accordance with instructions on container).
2. Chemicals will be delivered to the site in sealed containers by the contractor and introduced in proper amounts to the distributor or tank truck under the direct supervision of a representative of the Contracting Officer.
3. The remainder of the tank will then be filled by the contractor with water from an on-site source.
4. Workers handling chemicals, applying spray application or subject to possible overspray will be required to wear protective clothing, safety goggles, heavy duty rubber gloves and an approved carbon canister type respirator.
5. Apply solution in accordance with following rates:
 - a) 3-gallons per square yard - all rubble surfaces with exception of areas defined in (b).
 - b) 9-gallons per square yard - areas to be designated by the representative of the Contracting Officer in the immediate vicinity of the following locations:
 1. _____ structure _____.
 2. _____ Fruit and Meat Products _____ structures in _____.
 - c) 1.5-gallons per square yard - paved areas including street and sidewalks.
6. Performance will be accomplished by a sequence of applications based on the order of completion of debris removal operations on a block by block basis.

APPENDIX I

CHELSEA AREA OFFICE - LIST OF MAJOR CONTRACTS

DESCRIPTION	BLOCKS	DOCUMENT NO.	AWARD DATE	CONTRACTOR	INCLS MODS AMT
Levelling & Debris Removal	3A & 4A	M-0601	10/18/73	Anthony Construction Co., Inc.	\$ 9,900.-
Levelling of Structures	Entire Area	C-0041	10/19/73	Wes Construction Corp.	10,005.-
Levelling of Structures	Entire Area	M-0602	10/19/73	Mystic Bldg. Wrecking Co., Inc.	5,348.-
Debris Removal	6 & 7	C-0042	10/20/73	Walsh Contracting Co.	14,800.-
Debris Removal	5, 13 & 14	C-0043	10/25/73	John J. Duane Company, Inc.	32,800.-
Debris Removal	3, 11 & 12	C-0044	10/27/73	Mystic Bldg. Wrecking Co., Inc.	56,000.-
Debris Removal (organics)	10 (partial)	C-0045	11/3/73	John J. Duane Company, Inc.	27,000.-
Debris Removal	9	C-0046	11/6/73	Valley Excavating Co.	7,650.-
Debris Removal	10	C-0047	11/7/73	Walter McLellan Excavating	12,400.-
Debris Removal	16 & 17	C-0048	11/8/73	Peter Ruggiero	18,900.-
Debris Removal	15	M-0610	11/12/73	Valley Excavating Co.	4,010.-
Debris Removal	8	M-0611	11/13/73	Mystic Bldg. Wrecking Co., Inc.	3,500.-
Surface Decontamination	Entire Area	C-0049	11/16/73	Coastal Services, Inc.	21,840.-
Debris Removal	18	C-0050	11/16/73	Walsh Contracting Co.	23,700.-

CHELSEA AREA OFFICE - LIST OF MAJOR CONTRACTS

<u>DESCRIPTION</u>	<u>BLOCKS</u>	<u>DOCUMENT NO.</u>	<u>AWARD DATE</u>	<u>CONTRACTOR</u>	<u>INCLS MODS AMT</u>
Debris Removal	2	C-0051	11/17/73	Mystic Bldg. Wrecking Co., Inc.	\$17,00.-
Sewer Cleaning	-	C-0052	11/26/73	E. Polcari & Son, Inc.	52,426.-
Levelling & Debris Removal	8A	C-0053	12/6/73	Valley Excavating Co.	19,950.-
Levelling & Debris Removal	4A	M-0612	12/8/73	Mystic Bldg. Wrecking Co., Inc.	3,985.-
Emergency Repairs of Water Protection System	Entire Area	DACW-74- C-0054	12/26/73	McNiff Company, Inc.	48,500.-
					<u>\$389,714.-</u>

APPENDIX J